DE–1303 **13**

DISTANCE EDUCATION

B.C.A. DEGREE EXAMINATION, MAY 2011.

PRINCIPLES OF OPERATING SYSTEMS

(2003 onwards)

Time : Three hours Maximum : 100 marks

Answer any FIVE of the following.

$(5 \times 20 = 100)$

1. (a) What is an operating system? Explain the components of operating system. (10)

(b) Explain in detail about operating system structure. (10)

2. (a) Describe the process of multiprogramming and Threads. (8)

(b) Write short notes on :

(i) Round Robin Scheduling

(ii) Priority Scheduling

(iii) Multiple Queues. (12)

3. (a) Give description about Direct memory Access and Device controller in detail. (10)

(b) What is meant by Deadlock? Explain the Ostrich Algorithm with example. (10)

4. (a) Explain Swapping and Memory Management. (8)

(b) Describe the structure of segmentation. (12)

5. (a) How will you organize a file? Explain in detail about directories. (12)

(b) What is security? What are the generic security attacks and viruses of security? (8)

6. (a) Explain why Real time-schedulin is Commonly used and also explain process scheduling. (10)

(b) Give a sketch of how an operating system disabling interrupts could implement semaphores. (10)

7. (a) What are the resources that appear in the deadlocks? How will you avoid deadlock with the help of Banker's Algorithm for a single resource? (10)

(b) Write short notes on (10)

(i) Deadlock prevention.

(ii) Device-Independent I/O software.

8. (a) What is the difference between a physical address and a virtual address? (8)

(b) Explain the difference between internal fragmentation and external fragmentation. (12)